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<110> Moore, et al.

<120> Human FK506 Binding Proteins

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<140> Unassigned
<141> 1999-01-06

<150> 60/070,875
<151> 1998-01-09

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<170> PatentIn Ver. 2.0

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Met Phe Pro Ala Gly Pro Pro Ser His Ser Leu Leu Arg Leu Pro Leu
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ctg cag ttg ctg cta ctg gtg gtg cag gcg gtg ggg agg ggg ctg ggc 156
Leu Gln Leu Leu Leu Leu Val Val Gln Ala Val Gly Arg Gly Leu Gly
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cgc gcc agc ccg gcc ggg ggc ccc ctg gaa gat gtg gtc atc gag agg 204
Arg Ala Ser Pro Ala Gly Gly Pro Leu Glu Asp Val Val Ile Glu Arg
            35   40   45

tac cac atc ccc agg gcc tgt ccc cgg gaa gtg cag atg ggg gat ttt 252
Tyr His Ile Pro Arg Ala Cys Pro Arg Glu Val Gln Met Gly Asp Phe
        50   55   60

gtg cgc tac cac tac aac ggc act ttt gaa gat ggc aag aag ttt gat 300
Val Arg Tyr His Tyr Asn Gly Thr Phe Glu Asp Gly Lys Lys Phe Asp
65   70   75   80

tca agc tat gat cgc aac acc ttg gtg gcc atc gtg gtg ggt gtg ggg 348
Ser Ser Tyr Asp Arg Asn Thr Leu Val Ala Ile Val Val Gly Val Gly
                85   90   95

cgc ctc atc act ggc atg gac cga ggc ctc atg ggc atg tgt gtc aac 396
Arg Leu Ile Thr Gly Met Asp Arg Gly Leu Met Gly Met Cys Val Asn
                100   105   110

gag cgg cga cgc ctc att gtg cct ccc cac ctg ggc tat ggg agc atc 444
Glu Arg Arg Arg Leu Ile Val Pro Pro His Leu Gly Tyr Gly Ser Ile
            115   120   125

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ggc ctg gcg ggg ctc att cca ccg gat gcc acc ctc tac ttc gat gtg    492
Gly Leu Ala Gly Leu Ile Pro Pro Asp Ala Thr Leu Tyr Phe Asp Val
    130             135             140

gtt ctg ctg gat gtg tgg aac aag gaa gac acc gtg cag gtg agc aca    540
Val Leu Leu Asp Val Trp Asn Lys Glu Asp Thr Val Gln Val Ser Thr
145                  150             155             160

ttg ctg cgc ccg ccc cac tgc ccc cgc atg gtc cag gac ggc gac ttt    588
Leu Leu Arg Pro Pro His Cys Pro Arg Met Val Gln Asp Gly Asp Phe
                165             170             175

gtc cgc tac cac tac aat ggc acc ctg ctg gac ggc acc tcc ttc gac    636
Val Arg Tyr His Tyr Asn Gly Thr Leu Leu Asp Gly Thr Ser Phe Asp
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acc agc tac agt aag ggc ggc act tat gac acc tac gtc ggc tct ggt    684
Thr Ser Tyr Ser Lys Gly Gly Thr Tyr Asp Thr Tyr Val Gly Ser Gly
            195             200             205

tgg ctg atc aag ggc atg gac cag ggg ctg ctg ggc atg tgt cct gga    732
Trp Leu Ile Lys Gly Met Asp Gln Gly Leu Leu Gly Met Cys Pro Gly
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cag aga agg aag att atc atc cct cca ttc ctg gcc tat ggc gag aaa    780
Gln Arg Arg Lys Ile Ile Ile Pro Pro Phe Leu Ala Tyr Gly Glu Lys
225             230             235             240

ggc tat ggt gag ggt ggg caa gga cac aag ggg aaa ttc cgc aga aga    828
Gly Tyr Gly Glu Gly Gly Gln Gly His Lys Gly Lys Phe Arg Arg Arg
            245             250             255

ggg aaa aac cag gcc tcc aca tac agt tgc tca ggt tgt ata ctg cac    876
Gly Lys Asn Gln Ala Ser Thr Tyr Ser Cys Ser Gly Cys Ile Leu His
            260             265             270

gag ggc atc caa cca agg act caa ggt ggg atg aaa tct acc ctt ggt    924
Glu Gly Ile Gln Pro Arg Thr Gln Gly Gly Met Lys Ser Thr Leu Gly
            275             280             285

gct act aag aag ggg tgc ttt ggc cgg gcg tgg tgg ctc acg ctt gta    972
Ala Thr Lys Lys Gly Cys Phe Gly Arg Ala Trp Trp Leu Thr Leu Val
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atc cca gca ctt tgg gaa gcc aag gcg gga gga tca cgaggtccag         1018
Ile Pro Ala Leu Trp Glu Ala Lys Ala Gly Gly Ser
305             310             315

gagatcgaga ccacggtgaa accccgtctc tactaaaaat acaaaaaaat tagccgggcg   1078

tggtgggggc gcctgtagtc ccagctactc ggagaggctg aggcaggaaa atgacgtgaa   1138

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         35                  40                  45

Tyr His Ile Pro Arg Ala Cys Pro Arg Glu Val Gln Met Gly Asp Phe
     50                  55                  60

Val Arg Tyr His Tyr Asn Gly Thr Phe Glu Asp Gly Lys Lys Phe Asp
 65              70                  75                  80

Ser Ser Tyr Asp Arg Asn Thr Leu Val Ala Ile Val Val Gly Val Gly
             85                  90                  95

Arg Leu Ile Thr Gly Met Asp Arg Gly Leu Met Gly Met Cys Val Asn
            100                 105                 110

Glu Arg Arg Arg Leu Ile Val Pro Pro His Leu Gly Tyr Gly Ser Ile
        115                 120                 125

Gly Leu Ala Gly Leu Ile Pro Pro Asp Ala Thr Leu Tyr Phe Asp Val
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Val Leu Leu Asp Val Trp Asn Lys Glu Asp Thr Val Gln Val Ser Thr
145                 150                 155                 160

Leu Leu Arg Pro Pro His Cys Pro Arg Met Val Gln Asp Gly Asp Phe
                165                 170                 175

Val Arg Tyr His Tyr Asn Gly Thr Leu Leu Asp Gly Thr Ser Phe Asp
            180                 185                 190

Thr Ser Tyr Ser Lys Gly Gly Thr Tyr Asp Thr Tyr Val Gly Ser Gly
            195                 200                 205

Trp Leu Ile Lys Gly Met Asp Gln Gly Leu Leu Gly Met Cys Pro Gly
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Gln Arg Arg Lys Ile Ile Ile Pro Pro Phe Leu Ala Tyr Gly Glu Lys
225                 230                 235                 240

Gly Tyr Gly Glu Gly Gly Gln Gly His Lys Gly Lys Phe Arg Arg Arg
            245                 250                 255

Gly Lys Asn Gln Ala Ser Thr Tyr Ser Cys Ser Gly Cys Ile Leu His
            260                 265                 270

Glu Gly Ile Gln Pro Arg Thr Gln Gly Gly Met Lys Ser Thr Leu Gly
            275                 280                 285

Ala Thr Lys Lys Gly Cys Phe Gly Arg Ala Trp Trp Leu Thr Leu Val
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gtg agc aca ttg ctg cgc ccg ccc cac tgc ccc cgc atg gtc cag gac    97
Val Ser Thr Leu Leu Arg Pro Pro His Cys Pro Arg Met Val Gln Asp
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ggc gac ttt gtc cgc tac cac tac aat ggc acc ctg ctg gac ggc acc    145
Gly Asp Phe Val Arg Tyr His Tyr Asn Gly Thr Leu Leu Asp Gly Thr
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tcc ttc gac acc agc tac agt aag ggc ggc act tat gac acc tac gtc    193
Ser Phe Asp Thr Ser Tyr Ser Lys Gly Gly Thr Tyr Asp Thr Tyr Val
      50                  55                  60

ggc tct ggt tgg ctg atc aag ggc atg gac cag ggg ctg ctg ggc atg    241
Gly Ser Gly Trp Leu Ile Lys Gly Met Asp Gln Gly Leu Leu Gly Met
65                  70                  75                  80

tgt cct gga gag aga agg aag att atc atc cct cca ttc ctg gcc tat    289
Cys Pro Gly Glu Arg Arg Lys Ile Ile Ile Pro Pro Phe Leu Ala Tyr
                  85                  90                  95

ggc gag aaa ggc tat ggg aca gtg atc ccc cca cag gcc tcg ctg gtc    337
Gly Glu Lys Gly Tyr Gly Thr Val Ile Pro Pro Gln Ala Ser Leu Val
              100                 105                 110

ttt cac gtc ctc ctg att gac gtg cac aac ccg aag gac gct gtc cag    385
Phe His Val Leu Leu Ile Asp Val His Asn Pro Lys Asp Ala Val Gln
          115                 120                 125

cta gag acg ctg gag ctc ccc ccc ggc tgt gtc cgc aga gcc ggg gcc    433
Leu Glu Thr Leu Glu Leu Pro Pro Gly Cys Val Arg Arg Ala Gly Ala
      130                 135                 140

ggg gac ttc atg cgc tac cac tac aat ggc tcc ttg atg gac ggc acc    481
Gly Asp Phe Met Arg Tyr His Tyr Asn Gly Ser Leu Met Asp Gly Thr
145                 150                 155                 160

ctc ttc gat tcc agc tac tcc cac aac cac acc tac aat acc tat atc    529
Leu Phe Asp Ser Ser Tyr Ser His Asn His Thr Tyr Asn Thr Tyr Ile
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ggg cag ggt tac atc atc ccc ggg atg gac cag ggg ctg cag ggt gcc    577
Gly Gln Gly Tyr Ile Ile Pro Gly Met Asp Gln Gly Leu Gln Gly Ala
              180                 185                 190

tgc atg ggg gaa cgc cgg aga att acc atc ccc ccg cac ctc gcc tat    625
Cys Met Gly Glu Arg Arg Arg Ile Thr Ile Pro Pro His Leu Ala Tyr
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atc agg aca ctg tcc cgg cca tct gag acc tgc aat gag acc acc aag    769
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                245             250             255

ctt ggg gac ttt gtt cga tac cat tac aac tgt tct ttg ctg gac ggc    817
Leu Gly Asp Phe Val Arg Tyr His Tyr Asn Cys Ser Leu Leu Asp Gly
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acc cag ctg ttc acc tcg cat gac tac ggg gcc ccc cag gag gcg act    865
Thr Gln Leu Phe Thr Ser His Asp Tyr Gly Ala Pro Gln Glu Ala Thr
            275             280             285

ctc ggg gcc aac aag gtg atc gaa ggc ctg gac acg ggc ctg cag ggc    913
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atg tgt gtg gga gag agg cgg cag ctc atc gtg ccc ccg cac ctg gcc    961
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305             310             315             320

cac ggg gag agt gga gcc cgg gga gtc cca ggc agt gct gtg ctg ctg   1009
His Gly Glu Ser Gly Ala Arg Gly Val Pro Gly Ser Ala Val Leu Leu
            325             330             335

ttt gag gtg gag ctg gtg tcc cgg gag gat ggg ctg ccc aca ggc tac   1057
Phe Glu Val Glu Leu Val Ser Arg Glu Asp Gly Leu Pro Thr Gly Tyr
            340             345             350

ctg ttt gtg tgg cac aag gac cct cct gcc aac ctg ttt gaa gac ata   1105
Leu Phe Val Trp His Lys Asp Pro Pro Ala Asn Leu Phe Glu Asp Ile
            355             360             365

gac ctc aac aag gat ggc gag gtc cct ccg gag gag ttc tcc acc ttc   1153
Asp Leu Asn Lys Asp Gly Glu Val Pro Pro Glu Glu Phe Ser Thr Phe
            370             375             380

atc aag gct caa gtg agt gag ggc aaa gga cgc ctc atg cct ggg cag   1201
Ile Lys Ala Gln Val Ser Glu Gly Lys Gly Arg Leu Met Pro Gly Gln
385             390             395             400

gac cct gag aaa acc ata gga gac atg ttc cag aac cag gac cgc aac   1249
Asp Pro Glu Lys Thr Ile Gly Asp Met Phe Gln Asn Gln Asp Arg Asn
            405             410             415

cag gac ggc aag atc aca gtc gac gag ctc aag ctg aag tca gat gag   1297
Gln Asp Gly Lys Ile Thr Val Asp Glu Leu Lys Leu Lys Ser Asp Glu
            420             425             430

gac gag gag cgg gtc cac gag gag ctc tgaggggcag ggagcctggc         1344
Asp Glu Glu Arg Val His Glu Glu Leu
            435             440

caggcctgag acacagaggc ccactgcgag ggggacagtg gcggtgggac tgacctgctg 1404
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acagtcaccc tccctctgct gggatgaggt ccaggagcca actaaaacaa tggcagagga 1464

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Gly Asp Phe Val Arg Tyr His Tyr Asn Gly Thr Leu Leu Asp Gly Thr
         35                  40                  45

Ser Phe Asp Thr Ser Tyr Ser Lys Gly Gly Thr Tyr Asp Thr Tyr Val
     50                  55                  60

Gly Ser Gly Trp Leu Ile Lys Gly Met Asp Gln Gly Leu Leu Gly Met
 65                  70                  75                  80

Cys Pro Gly Glu Arg Arg Lys Ile Ile Ile Pro Pro Phe Leu Ala Tyr
                 85                  90                  95

Gly Glu Lys Gly Tyr Gly Thr Val Ile Pro Pro Gln Ala Ser Leu Val
                100                 105                 110

Phe His Val Leu Leu Ile Asp Val His Asn Pro Lys Asp Ala Val Gln
         115                 120                 125

Leu Glu Thr Leu Glu Leu Pro Pro Gly Cys Val Arg Arg Ala Gly Ala
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Gly Asp Phe Met Arg Tyr His Tyr Asn Gly Ser Leu Met Asp Gly Thr
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Leu Phe Asp Ser Ser Tyr Ser His Asn His Thr Tyr Asn Thr Tyr Ile
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Gly Gln Gly Tyr Ile Ile Pro Gly Met Asp Gln Gly Leu Gln Gly Ala
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Cys Met Gly Glu Arg Arg Arg Ile Thr Ile Pro Pro His Leu Ala Tyr
          195             200             205

Gly Glu Asn Gly Thr Gly Asp Lys Ile Pro Gly Ser Ala Val Leu Ile
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Phe Asn Val His Val Ile Asp Phe His Asn Pro Ala Asp Val Val Glu
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Ile Arg Thr Leu Ser Arg Pro Ser Glu Thr Cys Asn Glu Thr Thr Lys
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Leu Gly Asp Phe Val Arg Tyr His Tyr Asn Cys Ser Leu Leu Asp Gly
              260             265                   270

Thr Gln Leu Phe Thr Ser His Asp Tyr Gly Ala Pro Gln Glu Ala Thr
              275             280             285

Leu Gly Ala Asn Lys Val Ile Glu Gly Leu Asp Thr Gly Leu Gln Gly
    290             295                   300

Met Cys Val Gly Glu Arg Arg Gln Leu Ile Val Pro Pro His Leu Ala
305             310             315                   320

His Gly Glu Ser Gly Ala Arg Gly Val Pro Gly Ser Ala Val Leu Leu
              325             330                   335

Phe Glu Val Glu Leu Val Ser Arg Glu Asp Gly Leu Pro Thr Gly Tyr
              340             345             350

Leu Phe Val Trp His Lys Asp Pro Pro Ala Asn Leu Phe Glu Asp Ile
              355             360             365

Asp Leu Asn Lys Asp Gly Glu Val Pro Pro Glu Glu Phe Ser Thr Phe
    370             375                   380

Ile Lys Ala Gln Val Ser Glu Gly Lys Gly Arg Leu Met Pro Gly Gln
385             390                   395                   400

Asp Pro Glu Lys Thr Ile Gly Asp Met Phe Gln Asn Gln Asp Arg Asn
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Gln Asp Gly Lys Ile Thr Val Asp Glu Leu Lys Leu Lys Ser Asp Glu
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gccgccccg atg gcg ttc cgg ggc tgg agg ccc ccg ccg cca ccg ctg ctc 171
           Met Ala Phe Arg Gly Trp Arg Pro Pro Pro Pro Leu Leu
            1               5                   10

ctg ctg ctg ctc tgg gtg acc ggg cag gca gcg ccc gtg gcg ggc ctg  219
Leu Leu Leu Leu Trp Val Thr Gly Gln Ala Ala Pro Val Ala Gly Leu
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                    35                    40                    45

    tgc ccg cgc acc gtg cgc agc ggc gac ttc gtg cgc tac cac tac gtg    315
    Cys Pro Arg Thr Val Arg Ser Gly Asp Phe Val Arg Tyr His Tyr Val
                    50                    55                    60

    ggg acg ttc ccc gac ggc cag aag ttc gac tcc agc tat gac aga gac    363
    Gly Thr Phe Pro Asp Gly Gln Lys Phe Asp Ser Ser Tyr Asp Arg Asp
                65                    70                    75

    tcc act ttc aat gtg ttt gtg gga aaa gga cag ctg atc aca ggg atg    411
    Ser Thr Phe Asn Val Phe Val Gly Lys Gly Gln Leu Ile Thr Gly Met
            80                    85                    90

    gac cag gct ctt gtt ggg atg tgc gta aac gag aga cct ttc gtg aag    459
    Asp Gln Ala Leu Val Gly Met Cys Val Asn Glu Arg Arg Phe Val Lys
    95                    100                   105                   110

    att ccc cca aag ctt gcc tac gga aat gaa aga gtt tct ggt gtg atc    507
    Ile Pro Pro Lys Leu Ala Tyr Gly Asn Glu Arg Val Ser Gly Val Ile
                    115                   120                   125

    ccc ccc aat tca gtg ctt cat ttt gat gta ctt ctg atg gat att tgg    555
    Pro Pro Asn Ser Val Leu His Phe Asp Val Leu Leu Met Asp Ile Trp
                130                   135                   140

    aat tct gaa gac cag gtt cag att cac acc tat ttc aag ccc ccg agt    603
    Asn Ser Glu Asp Gln Val Gln Ile His Thr Tyr Phe Lys Pro Pro Ser
                145                   150                   155

    tgc cct cgg acc atc cag gtg tct gat ttt gtg agg tac cac tac aac    651
    Cys Pro Arg Thr Ile Gln Val Ser Asp Phe Val Arg Tyr His Tyr Asn
    160                   165                   170

    ggg acg ttc ctg gac gga act ctg ttt gat tcg agt cac aat cgc atg    699
    Gly Thr Phe Leu Asp Gly Thr Leu Phe Asp Ser Ser His Asn Arg Met
    175                   180                   185                   190

    aaa aca tat gac acg tat gtg gga att ggc tgg ctg att cct gga atg    747
    Lys Thr Tyr Asp Thr Tyr Val Gly Ile Gly Trp Leu Ile Pro Gly Met
                    195                   200                   205

    gat aaa ggg ctg ctg ggg atg tgt gtg ggt gag aag cgc atc atc acc    795
    Asp Lys Gly Leu Leu Gly Met Cys Val Gly Glu Lys Arg Ile Ile Thr
                    210                   215                   220

    att cct cct ttt ctg gcc tat gga gag gat gga gat ggg aaa gac att    843
    Ile Pro Pro Phe Leu Ala Tyr Gly Glu Asp Gly Asp Gly Lys Asp Ile
                    225                   230                   235

    ccc ggt cag gca tct ctg gtg ttt gat gtt gca tta ttg gac ctc cat    891
    Pro Gly Gln Ala Ser Leu Val Phe Asp Val Ala Leu Leu Asp Leu His
                240                   245                   250

    aac ccc aag gac agc att tcc att gag aac aag gta gta cct gaa aac    939
    Asn Pro Lys Asp Ser Ile Ser Ile Glu Asn Lys Val Val Pro Glu Asn
    255                   260                   265                   270
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tgt gag cgg ata agt caa agt ggg gac ttt ctc acg tat cat tac aat     987
Cys Glu Arg Ile Ser Gln Ser Gly Asp Phe Leu Thr Tyr His Tyr Asn
                275             280             285

ggc acg ctt ctg gat ggc acc ctc ttt gat tcc agc tac tct cgg aac    1035
Gly Thr Leu Leu Asp Gly Thr Leu Phe Asp Ser Ser Tyr Ser Arg Asn
                290             295             300

cgc acg ttt gac acg tac att ggg cag ggc tac gtg att cct ggg atg    1083
Arg Thr Phe Asp Thr Tyr Ile Gly Gln Gly Tyr Val Ile Pro Gly Met
                305             310             315

gat gaa ggt cta ctt ggt gtt tgc att gga gaa aag cga ang att gtg    1131
Asp Glu Gly Leu Leu Gly Val Cys Ile Gly Glu Lys Arg Xaa Ile Val
                320             325             330

gtc ccg cct cac ctg ggg tat gga gag gaa gga aga ggg aat atc ccc    1179
Val Pro Pro His Leu Gly Tyr Gly Glu Glu Gly Arg Gly Asn Ile Pro
335             340             345             350

ggc tcg gct gtg ctg gtg ttt gac atc cat gtg atc gac ttc cac aac    1227
Gly Ser Ala Val Leu Val Phe Asp Ile His Val Ile Asp Phe His Asn
                355             360             365

cct tcg gac tcc atc agc atc acc tcc cac tac aaa cct cct gac tgc    1275
Pro Ser Asp Ser Ile Ser Ile Thr Ser His Tyr Lys Pro Pro Asp Cys
                370             375             380

tca gtg ctg agt aag aag gga gat tac ctc aaa tat cac tac aat gcc    1323
Ser Val Leu Ser Lys Lys Gly Asp Tyr Leu Lys Tyr His Tyr Asn Ala
                385             390             395

tca ctt ctg gat ggg acc ctg ctg gac tcc acg tgg aat tta ggc aaa    1371
Ser Leu Leu Asp Gly Thr Leu Leu Asp Ser Thr Trp Asn Leu Gly Lys
                400             405             410

act tac aat att gtt ctg gga tct ggg caa gtt gtg ttg ggg atg gac    1419
Thr Tyr Asn Ile Val Leu Gly Ser Gly Gln Val Val Leu Gly Met Asp
415             420             425             430

atg ggt ctc aga gag atg tgc gtt ggc gag aaa cgg aca gtg atc att    1467
Met Gly Leu Arg Glu Met Cys Val Gly Glu Lys Arg Thr Val Ile Ile
                435             440             445

ccg cct cac ctg ggc tat ggg gaa gct ggc gtg gat gga gaa gtg ccc    1515
Pro Pro His Leu Gly Tyr Gly Glu Ala Gly Val Asp Gly Glu Val Pro
                450             455             460

ggc agt gcc gta tta gtg ttt gac att gag cts ctg gag ctg gtg gct    1563
Gly Ser Ala Val Leu Val Phe Asp Ile Glu Xaa Leu Glu Leu Val Ala
                465             470             475

ggc ctt cct gag ggg tac atg ttc ata tgg aat ggt gag gtg tca ccc    1611
Gly Leu Pro Glu Gly Tyr Met Phe Ile Trp Asn Gly Glu Val Ser Pro
                480             485             490

aac ctc ttt gaa gaa att gac aag gat ggc aac gga gaa gtc ctc ctg    1659
Asn Leu Phe Glu Glu Ile Asp Lys Asp Gly Asn Gly Glu Val Leu Leu
495             500             505             510

gaa gag ttc tca gag tac att cac gcc cag gtg gca tct ggc aaa ggg    1707
Glu Glu Phe Ser Glu Tyr Ile His Ala Gln Val Ala Ser Gly Lys Gly
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                  515                   520                   525
aaa ctc gct cct ggc ttt gat gct gag ctg att gtg aag aat atg      1752
Lys Leu Ala Pro Gly Phe Asp Ala Glu Leu Ile Val Lys Asn Met
            530                   535                   540

ttcaccaacc aggaccggaa tggagatggg aaggtcacag ccgaggaatt taaactcara 1812

gaccaggaag ccaaacacga tgtaactcta aacctggcat gaaccagatg gtgccagggg 1872

agtacgtgac accaagccac ctgtgtggma agacgtgcar ttgarggtgc aagggtctc 1932

tcagaagttt gcatccatta gccagtagta ggtggggtca catagtacct ggtgtacaca 1992

tcggggtggg ttgatatatg gggtgagaag tttgggctga tcgccagtga tagtaaacaa 2052

aatctgtgnc agagggcctt agcatgggat gtgtccagta ttcgaccac gcgtccgcnt 2112

gccaaccatg atttgtgagc cttctgggaa attttgttat taaagaata tatagtgtnc 2172

agacggaagt tataatcatc ttggaggaac cataagaaaa ggtgtccagg gtatctatat 2232

aaagagggtt aaattttttt ttaacttgct ggttaaaaca ttttagaaat attctagaga 2292

tgggcaggag agtcaaaggg cttgcttgcc ccagcagagt tccagcaga cagccatgga 2352

tattcccagc agcctgtgca aattctgatg atggccccac ccccgcacac ggcacacgnc 2412

acatcawgct tttccagctc atcacacccc gccccantnn gggcctacca ttaatagngt 2472

atnanttgga ggntaaaaga gccttttgga cagaaactg ggccaggnaa aggcatntca 2532

gaccacaaat agagaatttg attcgtcatt tgccacanaa gtcatctgnt tagcttntcc 2592

tttccttnan ananatttna nttttttctg gaggcagagt ctccctttgt cgccaggctg 2652

gagtgcagtg gtgccatctc ggctcactgc agcactgtct cggctcactg cagcktccgc 2712

ctcccgtatt caagcgattc tcctgtctca gcctcctgag tagctgggas tacaggtgtg 2772

caccaccacg cccggctaat ttttgtattt ttagtagaga cggggtttca ctgtgttggc 2832

caggatggtc tcaatctcga cttcgtgatc cgcccacctt ggcctcccaa agtgttggga 2892

ttacaggcgt gactcaccat gcccagccac ttagttttt cttattccca cctttctatc 2952

ccatagaaca tctttttat cttccctgaa ccatatwgat gagataaata gggctggggg 3012

mtgggccccg ctggtcactc aacagagtat ttcccttggc cgagatggaa gttttgtccc 3072

aatagatgag ctgctgagta tcaacaaggt gacattttc tgctgcccat ttgtgtcctg 3132

gagacggtgg tacctgaag gcagaggcca gtgccgcaag acagcaatga cagtccacct 3192

gccgacctga ttcctgatc atggaataac cacatggcta ccttctatcc tctgttccca 3252

aatggtggtg gcactatcc tgaagtcgtc aatgacttcc ctttgaaact actttatttt 3312

actaatttaa actattttgt actgatgtag ccctgaggta gttcatgaaa atgctgtgca 3372

ctcattccat ggataaatg ttggaaagct catcttttct gatataaaat gttgaatgat 3432
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<210> 6
<211> 541
<212> PRT
<213> Homo sapiens

<400> 6

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Met Ala Phe Arg Gly Trp Arg Pro Pro Pro Pro Leu Leu Leu Leu
 1           5               10              15

Leu Leu Trp Val Thr Gly Gln Ala Ala Pro Val Ala Gly Leu Gly Ser
            20              25              30

Asp Ala Glu Leu Gln Ile Glu Arg Arg Phe Val Pro Asp Glu Cys Pro
        35              40              45

Arg Thr Val Arg Ser Gly Asp Phe Val Arg Tyr His Tyr Val Gly Thr
        50              55              60

Phe Pro Asp Gly Gln Lys Phe Asp Ser Ser Tyr Asp Arg Asp Ser Thr
65              70              75              80

Phe Asn Val Phe Val Gly Lys Gly Gln Leu Ile Thr Gly Met Asp Gln
            85              90              95

Ala Leu Val Gly Met Cys Val Asn Glu Arg Arg Phe Val Lys Ile Pro
            100             105             110

Pro Lys Leu Ala Tyr Gly Asn Glu Arg Val Ser Gly Val Ile Pro Pro
        115             120             125

Asn Ser Val Leu His Phe Asp Val Leu Leu Met Asp Ile Trp Asn Ser
        130             135             140

Glu Asp Gln Val Gln Ile His Thr Tyr Phe Lys Pro Pro Ser Cys Pro
145             150             155             160

Arg Thr Ile Gln Val Ser Asp Phe Val Arg Tyr His Tyr Asn Gly Thr
            165             170             175

Phe Leu Asp Gly Thr Leu Phe Asp Ser Ser His Asn Arg Met Lys Thr
            180             185             190

Tyr Asp Thr Tyr Val Gly Ile Gly Trp Leu Ile Pro Gly Met Asp Lys
        195             200             205

Gly Leu Leu Gly Met Cys Val Gly Glu Lys Arg Ile Ile Thr Ile Pro
        210             215             220

Pro Phe Leu Ala Tyr Gly Glu Asp Gly Asp Gly Lys Asp Ile Pro Gly
225             230             235             240

Gln Ala Ser Leu Val Phe Asp Val Ala Leu Leu Asp Leu His Asn Pro
            245             250             255

Lys Asp Ser Ile Ser Ile Glu Asn Lys Val Val Pro Glu Asn Cys Glu
            260             265             270

Arg Ile Ser Gln Ser Gly Asp Phe Leu Thr Tyr His Tyr Asn Gly Thr
        275             280             285
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Leu Leu Asp Gly Thr Leu Phe Asp Ser Ser Tyr Ser Arg Asn Arg Thr
    290                 295                 300

Phe Asp Thr Tyr Ile Gly Gln Gly Tyr Val Ile Pro Gly Met Asp Glu
305                 310                 315                 320

Gly Leu Leu Gly Val Cys Ile Gly Glu Lys Arg Xaa Ile Val Val Pro
                325                 330                 335

Pro His Leu Gly Tyr Gly Glu Glu Gly Arg Gly Asn Ile Pro Gly Ser
            340                 345                 350

Ala Val Leu Val Phe Asp Ile His Val Ile Asp Phe His Asn Pro Ser
            355                 360                 365

Asp Ser Ile Ser Ile Thr Ser His Tyr Lys Pro Pro Asp Cys Ser Val
    370                 375                 380

Leu Ser Lys Lys Gly Asp Tyr Leu Lys Tyr His Tyr Asn Ala Ser Leu
385                 390                 395                 400

Leu Asp Gly Thr Leu Leu Asp Ser Thr Trp Asn Leu Gly Lys Thr Tyr
                405                 410                 415

Asn Ile Val Leu Gly Ser Gly Gln Val Val Leu Gly Met Asp Met Gly
            420                 425                 430

Leu Arg Glu Met Cys Val Gly Glu Lys Arg Thr Val Ile Ile Pro Pro
    435                 440                 445

His Leu Gly Tyr Gly Glu Ala Gly Val Asp Gly Glu Val Pro Gly Ser
    450                 455                 460

Ala Val Leu Val Phe Asp Ile Glu Xaa Leu Glu Leu Val Ala Gly Leu
465                 470                 475                 480

Pro Glu Gly Tyr Met Phe Ile Trp Asn Gly Glu Val Ser Pro Asn Leu
                485                 490                 495

Phe Glu Glu Ile Asp Lys Asp Gly Asn Gly Glu Val Leu Leu Glu Glu
                500                 505                 510

Phe Ser Glu Tyr Ile His Ala Gln Val Ala Ser Gly Lys Gly Lys Leu
            515                 520                 525

Ala Pro Gly Phe Asp Ala Glu Leu Ile Val Lys Asn Met
    530                 535                 540
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<211> 1251
<212> DNA
<213> Homo sapiens

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   Thr Tyr Gly Glu Ile Gly Trp Leu Ile Pro Gly Met Asp Lys Gly
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          1                5                    10                      15
ctg ctg ggg atg tgt gtg ggt gag aag cgc atc atc acc att cct cct      95
Leu Leu Gly Met Cys Val Gly Glu Lys Arg Ile Ile Thr Ile Pro Pro
              20                25                      30

ttt ctg gcc tat gga gag gat gga gat ggg aaa gac att ccc ggt cag     143
Phe Leu Ala Tyr Gly Glu Asp Gly Asp Gly Lys Asp Ile Pro Gly Gln
          35                40                45

gca tct ctg gtg ttt gat gtt gca tta ttg gac ctc cat aac ccc aag     191
Ala Ser Leu Val Phe Asp Val Ala Leu Leu Asp Leu His Asn Pro Lys
          50                55                60

gac agc att tcc att gag aac aag gta gta cct gaa aac tgt gag cgg     239
Asp Ser Ile Ser Ile Glu Asn Lys Val Val Pro Glu Asn Cys Glu Arg
      65                70                75

ata agt caa agt ggg gac ttt ctc agg tat cat tac aat ggc acg ctt     287
Ile Ser Gln Ser Gly Asp Phe Leu Arg Tyr His Tyr Asn Gly Thr Leu
  80                85                90                    95

ctg gat ggc acc ctc ttt gat tcc agc tac tct cgg aac cgc acg ttt     335
Leu Asp Gly Thr Leu Phe Asp Ser Ser Tyr Ser Arg Asn Arg Thr Phe
              100               105                   110

gac acg tac att ggg cag ggc tac gtg att cct ggg atg gat gaa ggt     383
Asp Thr Tyr Ile Gly Gln Gly Tyr Val Ile Pro Gly Met Asp Glu Gly
          115               120               125

cta ctt ggt gtt tgc att gga gaa aag cga agg att gtg gtc ccg cct     431
Leu Leu Gly Val Cys Ile Gly Glu Lys Arg Arg Ile Val Val Pro Pro
          130               135               140

cac ctg ggg tat gga gag gaa gga aga ggg aat atc ccc ggc tcg gct     479
His Leu Gly Tyr Gly Glu Glu Gly Arg Gly Asn Ile Pro Gly Ser Ala
      145               150               155

gtg ctg gtg ttt gac atc cat gtg atc gac ttc cac aac cct tcg gac     527
Val Leu Val Phe Asp Ile His Val Ile Asp Phe His Asn Pro Ser Asp
160               165               170               175

tcc atc agc atc acc tcc cac tac aaa ccc cct gac tgc tca gtg ctg     575
Ser Ile Ser Ile Thr Ser His Tyr Lys Pro Pro Asp Cys Ser Val Leu
              180               185               190

agt aag aag gga gat tac ctc aaa tat cac tac aat gcc tca ctt ctg     623
Ser Lys Lys Gly Asp Tyr Leu Lys Tyr His Tyr Asn Ala Ser Leu Leu
              195               200               205

gat ggg acc ctg ctg gac tcc acg tgg aat tta ggc aaa act tac aat     671
Asp Gly Thr Leu Leu Asp Ser Thr Trp Asn Leu Gly Lys Thr Tyr Asn
          210               215               220

att gtt ctg gga tct ggg caa gtt gtg ttg ggg atg gac atg ggt ctc     719
Ile Val Leu Gly Ser Gly Gln Val Val Leu Gly Met Asp Met Gly Leu
          225               230               235

aga gag atg tgc gtt ggc gag aaa cgg aca gtg atc att ccg cct cac     767
Arg Glu Met Cys Val Gly Glu Lys Arg Thr Val Ile Ile Pro Pro His
240               245               250               255
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ctg ggc tat ggg gaa gct ggc gtg gat gga gaa gtg ccc ggc agt gcc    815
Leu Gly Tyr Gly Glu Ala Gly Val Asp Gly Glu Val Pro Gly Ser Ala
            260                 265                 270

gta tta gtg ttt gac att gag ctg ctg gag ctg gtg gct ggc ctt cct    863
Val Leu Val Phe Asp Ile Glu Leu Leu Glu Leu Val Ala Gly Leu Pro
            275                 280                 285

gag ggg tac atg ttc ata tgg aat ggt gag gtg tca ccc aac ctc ttt    911
Glu Gly Tyr Met Phe Ile Trp Asn Gly Glu Val Ser Pro Asn Leu Phe
            290                 295                 300

gaa gaa atc aac aag gtg aca ttt ttc tgc tgc cca ttt gtg tcc tgg    959
Glu Glu Ile Asn Lys Val Thr Phe Phe Cys Cys Pro Phe Val Ser Trp
    305                 310                 315

aga cgg tgg tac cct gaa ggc aga ggc cag ctg ccg caa gac agc aat    1007
Arg Arg Trp Tyr Pro Glu Gly Arg Gly Gln Leu Pro Gln Asp Ser Asn
320                 325                 330                 335

gac agt cca cct gcc gac ctg att cct gca tca tgg aat aac cac atg    1055
Asp Ser Pro Pro Ala Asp Leu Ile Pro Ala Ser Trp Asn Asn His Met
            340                 345                 350

gct acc ttc tat cct ctg ttc cca aat ggt ggt ggc act tat cct gaa    1103
Ala Thr Phe Tyr Pro Leu Phe Pro Asn Gly Gly Gly Thr Tyr Pro Glu
            355                 360                 365

gtc gtc aat gat ttc cct ttg aaa cta ctt tat ttt act aat tta aac    1151
Val Val Asn Asp Phe Pro Leu Lys Leu Leu Tyr Phe Thr Asn Leu Asn
            370                 375                 380

tat ttt gta ctg atg tagccctgag gtagttcatg aaaaatgctg tgcactcatt    1206
Tyr Phe Val Leu Met
            385

ccatgggaat aaatgttggg aaagctgaaa aaaaaaaaaa aaaaa                   1251


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<212> PRT
<213> Homo sapiens

<400> 8
Thr Tyr Gly Glu Ile Gly Trp Leu Ile Pro Gly Met Asp Lys Gly Leu
  1               5                  10                  15

Leu Gly Met Cys Val Gly Glu Lys Arg Ile Ile Thr Ile Pro Pro Phe
            20                  25                  30

Leu Ala Tyr Gly Glu Asp Gly Asp Gly Lys Asp Ile Pro Gly Gln Ala
            35                  40                  45

Ser Leu Val Phe Asp Val Ala Leu Leu Asp Leu His Asn Pro Lys Asp
    50                  55                  60

Ser Ile Ser Ile Glu Asn Lys Val Val Pro Glu Asn Cys Glu Arg Ile
65                  70                  75                  80

Ser Gln Ser Gly Asp Phe Leu Arg Tyr His Tyr Asn Gly Thr Leu Leu
                85                  90                  95
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Asp Gly Thr Leu Phe Asp Ser Ser Tyr Ser Arg Asn Arg Thr Phe Asp
            100   105   110

Thr Tyr Ile Gly Gln Gly Tyr Val Ile Pro Gly Met Asp Glu Gly Leu
            115   120   125

Leu Gly Val Cys Ile Gly Glu Lys Arg Arg Ile Val Val Pro Pro His
        130   135   140

Leu Gly Tyr Gly Glu Glu Gly Arg Gly Asn Ile Pro Gly Ser Ala Val
145   150   155   160

Leu Val Phe Asp Ile His Val Ile Asp Phe His Asn Pro Ser Asp Ser
                165   170   175

Ile Ser Ile Thr Ser His Tyr Lys Pro Pro Asp Cys Ser Val Leu Ser
            180   185   190

Lys Lys Gly Asp Tyr Leu Lys Tyr His Tyr Asn Ala Ser Leu Leu Asp
            195   200   205

Gly Thr Leu Leu Asp Ser Thr Trp Asn Leu Gly Lys Thr Tyr Asn Ile
        210   215   220

Val Leu Gly Ser Gly Gln Val Val Leu Gly Met Asp Met Gly Leu Arg
225   230   235   240

Glu Met Cys Val Gly Glu Lys Arg Thr Val Ile Ile Pro Pro His Leu
            245   250   255

Gly Tyr Gly Glu Ala Gly Val Asp Gly Glu Val Pro Gly Ser Ala Val
            260   265   270

Leu Val Phe Asp Ile Glu Leu Leu Glu Leu Val Ala Gly Leu Pro Glu
        275   280   285

Gly Tyr Met Phe Ile Trp Asn Gly Glu Val Ser Pro Asn Leu Phe Glu
    290   295   300

Glu Ile Asn Lys Val Thr Phe Phe Cys Cys Pro Phe Val Ser Trp Arg
305   310   315   320

Arg Trp Tyr Pro Glu Gly Arg Gly Gln Leu Pro Gln Asp Ser Asn Asp
            325   330   335

Ser Pro Pro Ala Asp Leu Ile Pro Ala Ser Trp Asn Asn His Met Ala
        340   345   350

Thr Phe Tyr Pro Leu Phe Pro Asn Gly Gly Gly Thr Tyr Pro Glu Val
        355   360   365

Val Asn Asp Phe Pro Leu Lys Leu Leu Tyr Phe Thr Asn Leu Asn Tyr
    370   375   380

Phe Val Leu Met
385